

(No Model.)

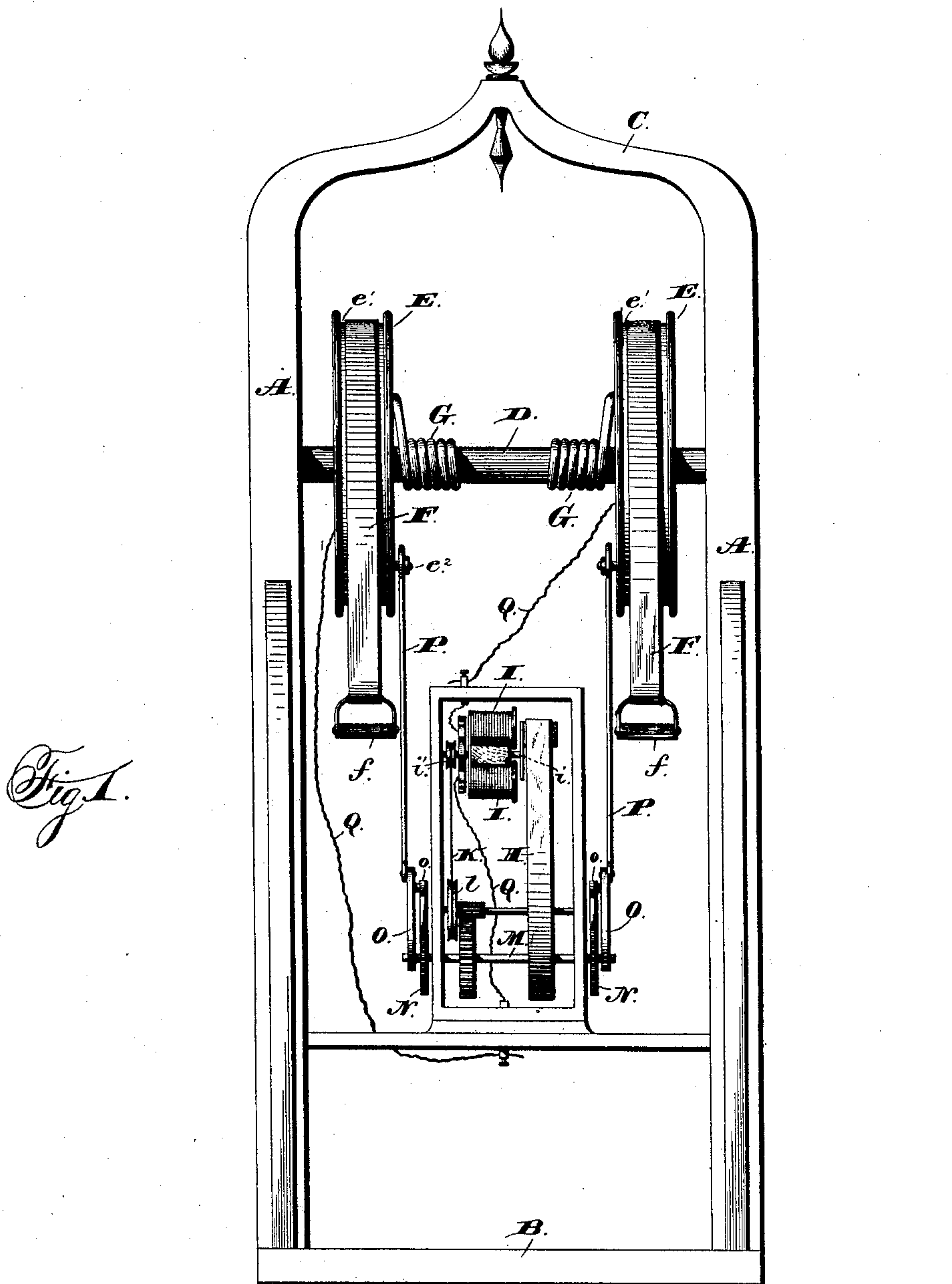
2 Sheets—Sheet 1.

G. P. CLARKE & G. HARSIN.

EXERCISING MACHINE.

No. 321,278.

Patented June 30, 1885.



Witnesses:
Jas. C. Hutchinson.
Henry C. Hazard.

Inventors.
G. P. Clarke & G. Harsin, by
Prindle & Russell, their Attys

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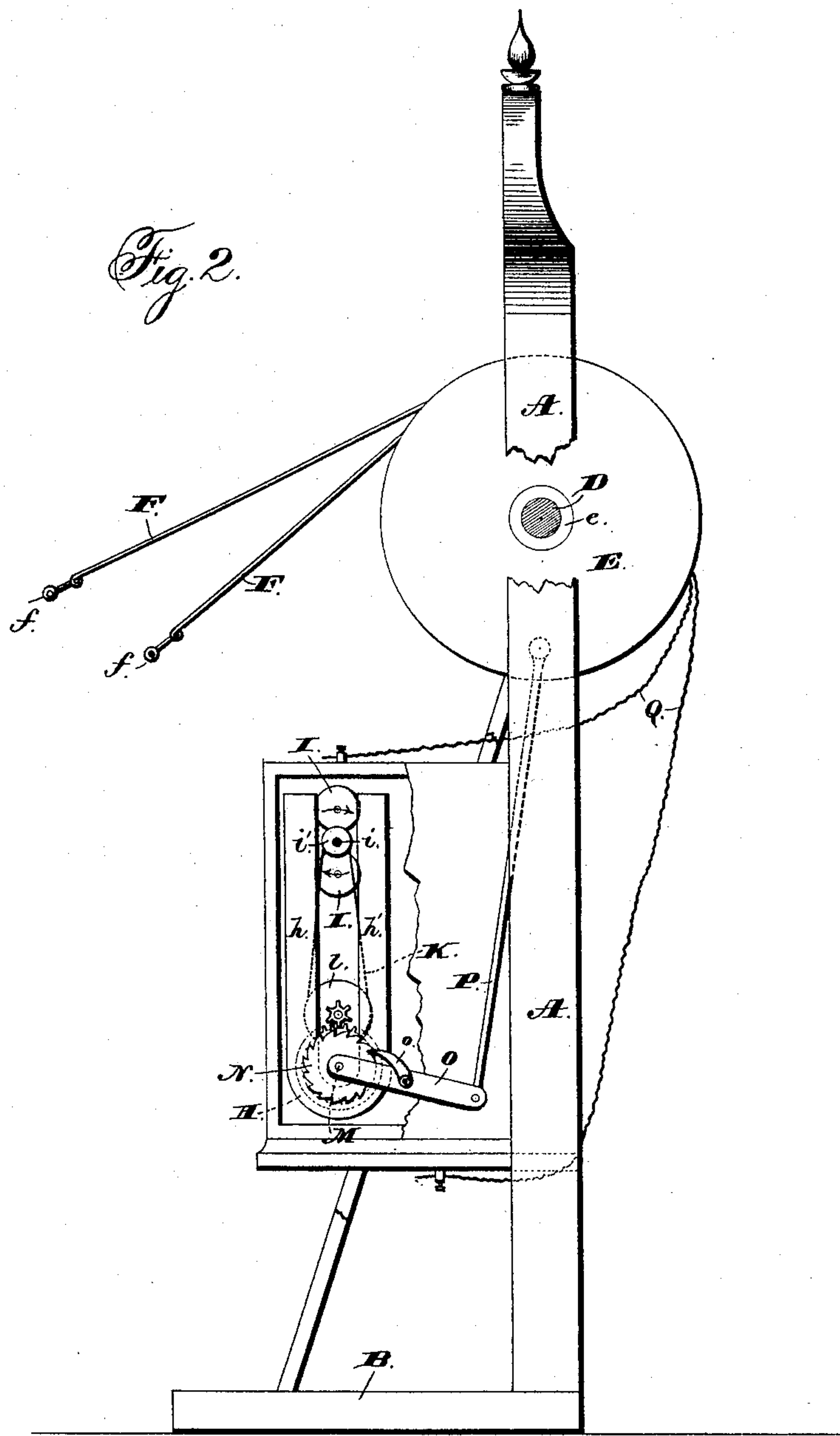
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UNITED STATES PATENT OFFICE.

GEORGE P. CLARKE AND GERARD HARSIN, OF NEW YORK, N. Y., ASSIGNORS
OF ONE-THIRD TO CHARLES E. FURMAN, OF SAME PLACE.

EXERCISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 321,278, dated June 30, 1885.

Application filed February 3, 1885. (No model.)

To all whom it may concern:

Be it known that we, GEO. P. CLARKE and GERARD HARSIN, of New York, in the county of New York, and in the State of New York, have
5 invented certain new and useful Improvements in Exercising-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1 is a front elevation of our apparatus as arranged for use, and Fig. 2 is a side elevation of the same.

Letters of like name and kind refer to like parts in each of the figures.

15 The design of our invention is to furnish, in a simple and convenient form, means whereby physical exercise may be combined with currents of electricity which are generated by the movements of the operator; and to this end
20 said invention consists, principally, in an exercising apparatus in which are combined the following elements, to wit: a resisting-pull that is adapted to be moved in one direction by an operator and to be returned to its normal
25 position by means of springs or weights, a magneto-electric mechanism, means whereby the reciprocating action of said pull will be communicated to and caused to set in motion
30 said electric mechanism, and means whereby the electric currents thus produced will be transmitted through said pull to the person of the operator, substantially as and for the purpose hereinafter specified.

35 It consists, further, in an exercising apparatus, in combination with a pull and a resisting-spring therefor, a magneto-electric mechanism actuated by such pull, and suitable connections whereby the electric current from
40 such mechanism is conveyed to the person of the operator, substantially as and for the purpose hereinafter shown.

45 It consists, finally, in the construction and combination of parts preferably employed in our apparatus, substantially as and for the purpose hereinafter set forth.

In carrying our invention into effect various forms of exercising apparatus may be used, and any one of the well-known forms of magneto-electric mechanism combined therewith;

but the construction shown is preferably employed for such purpose.

In the annexed drawings, A and A represent two uprights, which, at their lower ends, are secured to or within a suitable base, B, and at their upper ends are united and held
55 in relative positions by means of an arch, C. At a point near the upper ends of said uprights is placed a bar, D, which extends horizontally between and has its ends secured
60 within the same, and furnishes a bearing for two wheels, E and E, that are journaled thereon, and each properly insulated by means of an axial bushing, *e*, of glass or other suitable
65 non-conducting material, which bears upon said bar and forms the sole contact between the same and said wheel. The periphery of each wheel E is provided with a circumferential groove, *e'*, which receives a band, F, that
70 has one end secured to or upon said wheel, and its opposite end provided with a handle, *f*, that has a convenient size and shape to adapt it to be grasped by the hand of a person. Said wheels are held in a certain position
75 circumferentially upon the shaft D by means of springs G, which are coiled several times around the latter, and each has one of its ends fastened therein, and its opposite end, properly insulated, secured to said wheel, the arrangement being such as to cause the rotation of the latter to be resisted by said springs
80 and to cause it to be returned to its normal position again when released.

In the use of this apparatus the operator grasps the handle *f*, and pulling outward upon the same unwinds the straps F from the wheels
85 E, such movement being resisted by the springs G. Upon slackening the outward pressure upon said handles said springs return the parts to their normal positions, after which another outward pull is had, and the operations described are continued as long as necessary, constituting the desired exercise.

In order that the beneficial effect of electricity may be added to the advantages resulting from physical exercise, we place at a
95 suitable point between the lower portions of the uprights a magneto-electric apparatus, which consists of a permanent magnet, H, two jour-

naled induction-coils, I, that are adapted to revolve with their shaft *i*, adjacent to the poles *h* and *h'* of said magnet, and a belt, K, pulleys *i'* and *l*, or other usual means for connecting said shaft *i* with a driving-shaft, M, so that the rotation of the latter will cause said induction-coils to revolve with an increased velocity, such apparatus constituting one of the well-known forms of electric mechanism.

Upon the projecting ends of the shaft M are secured two ratchet-wheels, N, and upon the same is pivoted one end of a lever, O, which lever carries a pawl, *o*, that is adapted to engage with the toothed periphery of said wheels, so that by giving to said lever a reciprocating motion upon its pivotal bearing said wheel and shaft will be partially rotated at each return movement of the former. In consequence of the weight and relative velocity of the induction-coils I, they operate as balances, whereby an intermittent motion imparted to said driving-shaft becomes practically constant with the shaft *i*.

The outer end of the ratchet-lever O is connected with a crank-pin, *e'*, upon one side of one of the wheels E by means of a rod, P, which extends between and is pivoted to said parts, by which means the motions of said wheel caused by the manipulation of the band F are communicated to the electric mechanism, and the latter caused to operate as before described.

The magneto apparatus produces a current of electricity, which, by means of wires Q, is conducted to one of the handles *f*, and from thence through the body of the operator to the second handle *f*, and from the latter back to said electric apparatus or to the ground.

In practice it is found best to make the bands F of suitable conducting material, to enable them to form parts of the electric circuit, in which event the said wires pass to and are connected with the rear ends of said bands at their points of attachment with the wheels E.

The mechanism described is complete in itself, and may be set up and operated in any room where sufficient space can be found, and affords means whereby any desired amount of physical exercise can be had, and at the same

time an electric current of moderate or of considerable strength caused to pass through the person, the tension of such current being governed by the rapidity with which the apparatus is manipulated.

The apparatus is shown and described as adapted for operation by the hands of a person; but it will be evident that it may be readily arranged to be worked by the feet, or by either hands or feet, or by both, as desired.

Having thus described our invention, what we claim is—

1. An exercising apparatus in which are combined the following elements, to wit: a resisting-pull that is adapted to be moved in one direction by an operator and to be returned to its normal position by means of springs or weights, a magneto-electric mechanism, means whereby the reciprocating action of said pull will be communicated to and caused to set in motion said electric mechanism, and means whereby the electric currents thus produced will be transmitted through said pull to the person of the operator, substantially as and for the purpose specified.

2. In an exercising apparatus, in combination with a pull and a resisting-spring therefor, a magneto-electric mechanism actuated by such pull, and suitable connections whereby the electric current from such mechanism is conveyed to the person of the operator, substantially as and for the purpose shown.

3. The hereinbefore-described apparatus, in which are combined with the driving-shaft of a magneto electric mechanism a ratchet-wheel, N, ratchet-lever O, and pawl *o*, connecting-rod P, insulated spring-resisting wheel E, having a crank-pin, *e'*, pull-bands F, and wires Q, for connecting said bands with said electric mechanism, substantially as and for the purpose set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 21st day of January, 1885.

GEORGE P. CLARKE.
GERARD HARSIN.

Witnesses:

J. A. FRANCIS,
CHAS. E. FURMAN.